



**Team of Experts
on Military Operations on Urban Terrain
(MOUT)
&
Non-Lethal Weaponry (NLW)**

**NDIA 2001
Joint Services Small Arms Symposium
*Little Rock, AK***

15 August 2001

Mr. Robert Pizzola
Chairman, MOUT / NLW ToE
U.S Army TACOM-ARDEC
JSSAP
Com (973) 724-6236

Tank-automotive & **A**rmaments **COM**mand
Committed to Excellence

Mr. John Cline
NLW U.S. HoD
U.S. Army TACOM-ARDEC
Com (973) 724-7317

Report Documentation Page		
Report Date 15Aug2001	Report Type N/A	Dates Covered (from... to) -
Title and Subtitle Team of Experts on Military Operations on Urban Terrain (Mout)& Non-Leathal Weaponry (NLW)	Contract Number	
	Grant Number	
	Program Element Number	
Author(s) Pizzola, Robert; Cline, John	Project Number	
	Task Number	
	Work Unit Number	
Performing Organization Name(s) and Address(es) U.S Army TACOM-ARDEC JSSAP	Performing Organization Report Number	
Sponsoring/Monitoring Agency Name(s) and Address(es) NDIA (National Defense Industrial Association) 211 Wilson Blvd, STE. 400 Arlington, VA 22201-3061	Sponsor/Monitor's Acronym(s)	
	Sponsor/Monitor's Report Number(s)	
Distribution/Availability Statement Approved for public release, distribution unlimited		
Supplementary Notes Proceedings from the 2001 Joint Services Small Arms Symposium, Exhibition & Firing Demonstration 13-16 August 2001 Sponsored by NDIA		
Abstract		
Subject Terms		
Report Classification unclassified	Classification of this page unclassified	
Classification of Abstract unclassified	Limitation of Abstract UU	
Number of Pages 20		



MOUT/NLW Team of Experts

- Background:
 - Council of National Armaments Directors (CNAD – US Rep. is Under Sec. Of Def., Acq) establishes the Defense Capability Initiatives
 - Non-lethal Weaponry (NLW) becomes an identified capability – the NATO nations are to “develop NLW suitable for use in Peace Support Operations (PSO)”
 - Responsible organizations are the Research and Technology Board as lead with NATO Army Armaments Group (NAAG) support
 - Land Group 3 (LG3) is lead for the NAAG with US as lead nation



MOUT/NLW Team of Experts

- Background (continued):
 - Approximately 2 years ago, US introduces MOUT as a regular LG.3 discussion topic
 - LG.3 directs the formation of a Team of Experts (ToE) to handle the Defense Capabilities Initiative effort for NLW, but notes that NLW is a subset of MOUT.
 - MOUT/NLW ToE is formed. US is lead nation and also provides the chairman.
 - First meeting is at NATO Hq. in November 2000
 - A “way forward” is developed and agreed



The Way Forward

- NLW
 - It is agreed that we would seek to develop a NATO NLW Capability Set (NLCS)
 - The NATO NLCS will be based on the existing US NLCS, as modified by the nations
 - US NLCS has 5 materiel categories:
 - **Individual Protective Equipment**
 - **Munitions**
 - **Individual Enhancement Devices**
 - **Mission Enhancement Devices**
 - **Training Devices**

Tank-automotive & **A**rmaments **COM**mand
Committed to Excellence



Lethality, Survivability, Mobility and
Sustainment for America's Army



Individual Protective Equipment

In Modern Peacekeeping scenarios the soldier is required to maintain a highly visible and vulnerable position. The Non Lethal Capabilities Set is designed to provide the soldier with the means to avoid injury during civil confrontations.



**Non-Ballistic Riot Face Shield
Non-Ballistic Riot Body Shield
Non-Ballistic Riot Shin Guards**

**Ballistic Face Shield
Ballistic Body Shield
Ballistic Shin Guards**



Tank-automotive & **A**rmaments **COM**mand
Committed to Excellence



TACOM

Lethality, Survivability, Mobility and
Sustainment for America's Army



Munitions

The largest part of the kit is devoted to providing the unit commander with a variety of non-lethal and non-destructive means for deterring hostile personnel and incapacitating their material

**Diversionary Hand
Grenade**
**Rubber Ball Hand
Grenade**



12 GA Shotgun
12 GA Launching Cup
12 GA Point and Area Rounds
12 GA Diversionary Round
**12 GA Launching Cup
Cartridge**



Tank-automotive & **A**rmaments **COM**mand
Committed to Excellence



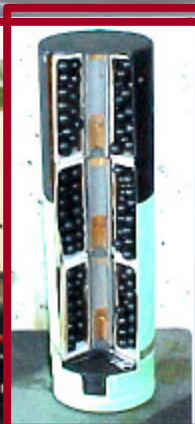
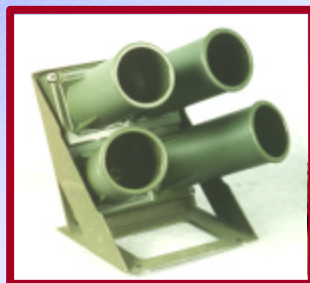
TACOM



Lethality, Survivability, Mobility and Sustainment for America's Army



M5, Modular Crowd Control Munition (MCCM)



40mm Sponge Grenade M1006

40mm NL Crowd Dispersal Cartridge (CDC), XM1029

66mm Vehicle Launched NL Grenades (XM98 Distraction, XM99 Blunt Trauma, L96E1 CS)

Tank-automotive & **A**rmaments **COM**mand
Committed to Excellence



Lethality, Survivability, Mobility and
Sustainment for America's Army



Individual Enhancement Devices

**M7 Individual Voice
Amplification System**

**Individual High Intensity Light
High Intensity Light Kit
High Intensity Light for
Shotgun**

**Hickory Riot Baton
Disposable Restraints
Individual RCA Disperser**

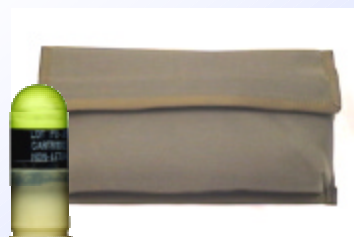
**Batteries and Replacement
Lamps**

12 GA Utility Pouch

12 GA Buttcraft

**Diversionary Grenade
Pouch**

40mm Pouch



Tank-automotive & **A**rmaments **COM**mand
Committed to Excellence

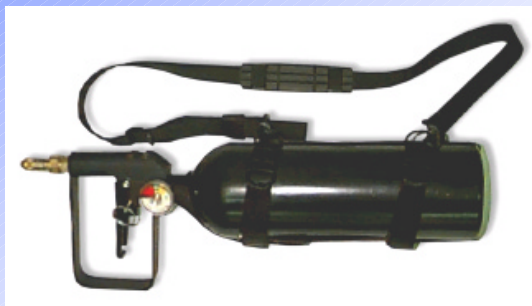


TACOM

Lethality, Survivability, Mobility and
Sustainment for America's Army



Mission Enhancement Devices



**M37 Mid-sized RCA Disperser
Refill CR Riot Control Agent**



**Ground Mounted Bullhorn
Portable Bullhorn**



Caltrop



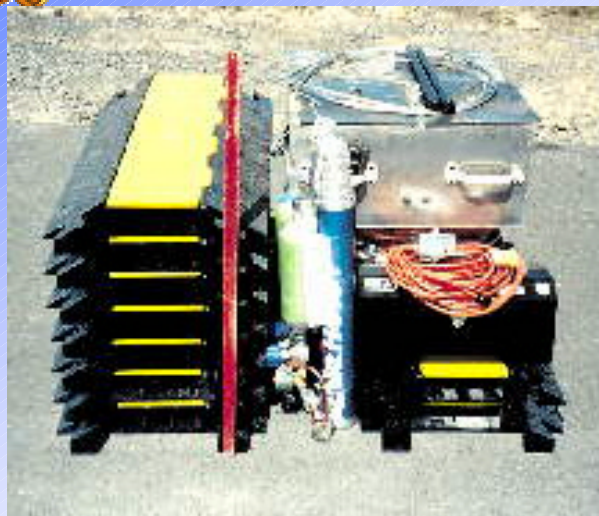
High Intensity Searchlight

Tank-automotive & **A**rmaments **COM**mand
Committed to Excellence



TACOM

Lethality, Survivability, Mobility and
Sustainment for America's Army



The M1, Portable Vehicle Arresting Barrier (PVAB) is designed to assist with short term physical security of critical facilities and for use for in vehicle check points. The device is designed to be set up by as few as 2 soldiers in under an hour. When emplaced it resembles a standard speed bump. It has the capability of stopping a light truck (up to 7500 lbs) at speeds up to 45 mph. It is best suited to mobile, short term vehicle check points in areas under US control where there is a threat of terrorist type activity where the threat uses the cover of noncombatants to infiltrate US areas of operation.

Tank-automotive & **A**rmaments **COM**mand
Committed to Excellence



TACOM

Lethality, Survivability, Mobility and
Sustainment for America's Army

Training Devices

The proper use and deployment of the Non-Lethal Capability Set runs counter to the normal doctrines and training that govern war. Familiarization with these new devices and techniques are essential.

**12 GA Dummy Round
L97E1 – 66mm Training Round
Inert Individual RCA disperser
Riot Training Suit
Riot Training Bag**



Tank-automotive & **A**rmaments **COM**mand
Committed to Excellence



The Way Forward

- NLW Continued
 - The US has prepared a matrix for the nations to complete
 - Matrix establishes a **common reference point** for NLW
 - US, as lead nation, to convert completed matrix into the baseline NATO NLCS. There are many issues to be resolved:
 - Legality of materiel solutions by nation
 - Public acceptability of materiel solutions by nation
 - Differing national Rules of Engagement
 - Weapons platform differences
 - while small arms ammo is standard, rifles, shotguns and grenade launchers with associated ammunition, are not standard
 - STANAGs are to be developed for common NATO NLCS items



The Way Forward

- NLW Continued:
 - The established NATO regional test centers (RTCs) for North America and Europe are planned to be used to conduct the standardization testing of NLW.
 - Further, the RTCs are also being considered for use in effectiveness testing of NLW materiel solutions
 - The Defense Capabilities Initiative roadmap calls for fielding of the NATO Non-Lethal Capability Set by the 2005 timeframe



MOUT Goals

- To develop STANAGs for items within an agreed urban operations capability set
- To identify issues and challenges identified with joint multinational MOUT operations and to improve our understanding of them
- To promote information exchange
- To promote bi-lateral and multi-lateral cooperation
- To significantly reduce costs associated with developing, purchasing, training, maintaining, and mission execution as regards material solutions within our capability set
- To significantly improve survivability through various methods, including materiel solutions, and
- To improve urban operations capabilities associated with multinational coalition operations



MOUT Focus Areas

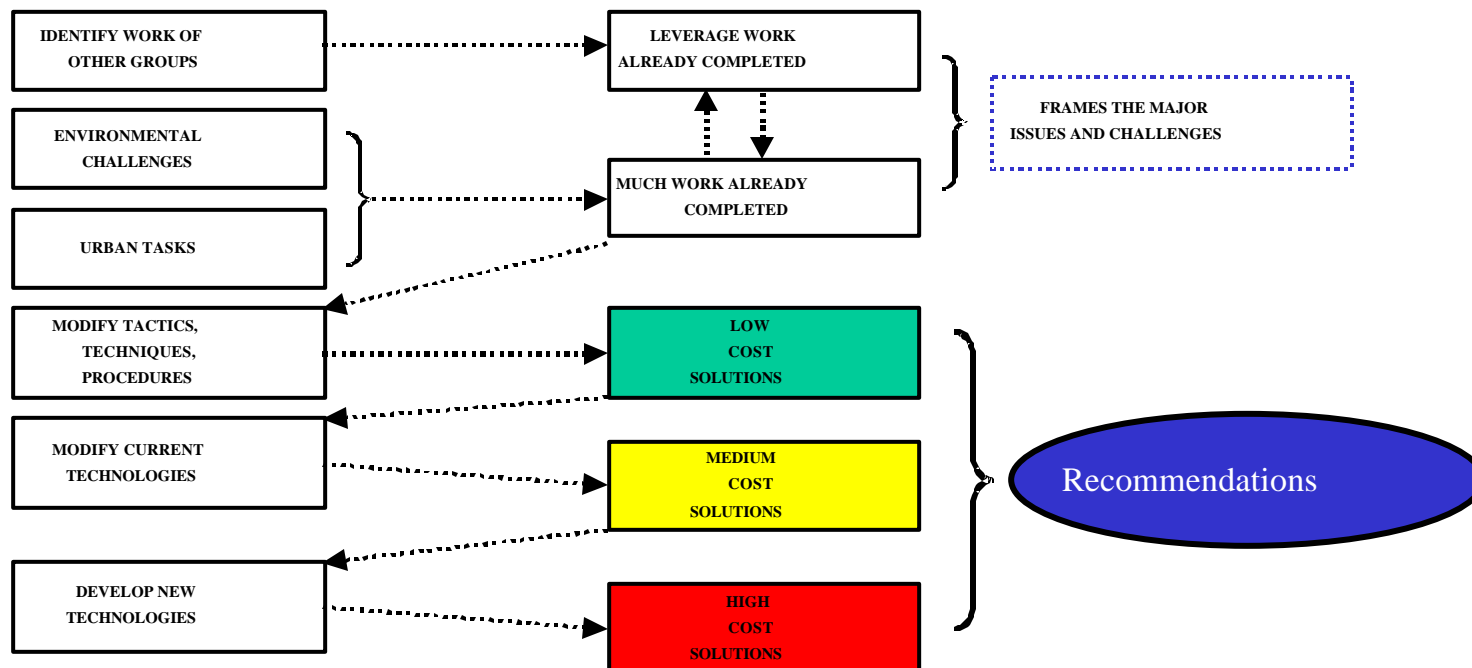
- Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (**C4ISR**)
- **Mobility** – the ability to move through the urban battlespace
- **Survivability** – all aspects of personnel and materiel protection
- **Lethality** – accurate lethal and non-lethal effects
- **Sustainability** – sustain the force throughout the urban battlespace
- **Situational Awareness** – know locations of self, friendlies, enemies, and non-combatants
- **Training** – the preparation of individuals, teams, and the entire force for success and survivability through constructive, live, and virtual means



TACOM

Lethality, Survivability, Mobility and
Sustainment for America's Army

METHODOLOGY



Methodology Will Produce The Lowest Cost, Most Effective Solutions To Enable
NATO Forces To Perform Full Spectrum Urban Operations With Significantly
Reduced Risk To Our Forces and Limited Collateral Damage.

Tank-automotive & **A**rmaments **COM**mand
Committed to Excellence



MOUT Methodology

- Initially identify historical and current work
- Identify environmental challenges, individual and collective tasks
- Investigate modification of Tactics, Techniques and Procedures as potential solutions, the lowest cost solutions
- Investigate technological modifications as moderate cost solutions
- Investigate development/procurement of new technology as the final step as these are generally the highest cost solutions



The MOUT Way Forward

- To begin the MOUT initiative, the US has prepared a matrix with much data provided
- Selected core nations; Canada and either Germany or the UK add their data; this interim matrix is submitted to all nations
- All nations complete matrix under core nation guidance
- Completed matrix is used as the basis for executing the MOUT methodology (TTP changes, modification, development, or procurement of agreed materiel items)



Conclusions

- MOUT incorporates NLW
- ToE mission is more complex than can be completed in 3 meetings
- Therefore, documentation to allow formation of a more permanent working group, a Plan of Work and Terms of Reference are being prepared for Land Group 3, NAAG approval
- A Non-lethal Weaponry NATO capability set is anticipated for 2005
- A MOUT capability set is also anticipated but no date for completion has yet been generated as the end state, including return of the mission to Land Group 3 control has not yet been agreed
- The next meeting is in Oberjettenburg, GE on 10, 11 Oct 2001.
 - **Many thanks to Germany for hosting this meeting**



An Acknowledgment

**All national participants have been helpful, but
special thanks for much hard work and valuable
assistance to Canada, MAJ Guy Lizotte**